



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,930	08/18/2005	Susan Michelle Kutay	J3671(C)	6883

201 7590 10/17/2007  
UNILEVER INTELLECTUAL PROPERTY GROUP  
700 SYLVAN AVENUE,  
BLDG C2 SOUTH  
ENGLEWOOD CLIFFS, NJ 07632-3100

EXAMINER
----------

CERNOCH, STEVEN MICHAEL

ART UNIT	PAPER NUMBER
----------	--------------

4114

MAIL DATE	DELIVERY MODE
-----------	---------------

10/17/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/517,930

Applicant(s)

KUTAY ET AL.

Examiner

Steven M. Cernoch

Art Unit

4114

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☒ Claim(s) 1-14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/14/2004</u> .                                              | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Specification***

1. The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.

### ***Claim Objections***

2. Claims 1-14 are objected to because of the following informalities: The Examiner recommends defining the meaning of the MEMS acronym, in Claim 10, line 1, within the body of the claims. In addition, applicant is informed that neither claims 9 nor 10 are actually numbered therefore it is assumed they refer to claims 9 and 10 only due to placement between 8 and 11. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 2 is rejected under 35 USC § 112, second paragraph, as it does not meet the correct claim structure. It is not a complete sentence and therefore it is not understood as to whether or not claim 2 and 3 are one claim.

*Claim Rejections - 35 USC § 103*

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ulczynski et al. (US Pat No 6,182,904) in view of Gordon et al. (US Pub No 2002/0065479).

Regarding claim 1, Ulczynski et al. discloses the hand-held domestic spraying product (Fig. 1, #10) comprising a reservoir (Abstract, line 2) holding a liquid composition (line 4), a nozzle means (line 3) for producing a spray from said liquid composition, an electrically powered pump (line 1) and a control means (line 3) but does not disclose the MEMS pump. However Gordon et al. does disclose the MEMS pump (paragraph 100). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have motivation to combine the invention of Ulczynski et al. with the MEMS pump of Gordon et al. because micro pumps are smaller and require less space.

With regards to claim 13, Ulczynski et al. teaches said transfer conduit (Fig. 3A, #19).

In regards to claim 14, Ulczynski et al. discloses that the transfer conduit comprises one or more valves (Fig. 3A, #15).

8. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ulczynski et al. (US Pat No 6,182,904) in view of Gordon et al. (US Pub No 2002/0065479) and further in view of Borod et al. (US Pat No 5,335,855).

Regarding claim 2, neither Ulczynski et al. or Gordon et al. disclose the air pump, however Borod et al. does disclose said air pump resulting in an air pressure modification, providing the force required to move the liquid composition (column 2, lines 36-39). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have motivation to combine the invention of Ulczynski et al. in view of Gordon et al. with the air pump of Borod et al. because air pumps are known in the art.

With regards to claim 5, Gordon et al. discloses the MEMS pump but Borod et al. discloses the air compressor, increasing the air pressure adjacent to the liquid composition (column 3, lines 64-66). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have motivation to combine the invention of Ulczynski et al. with the MEMS pump of Gordon et al. and the air pump of Borod et al. because micro air pumps are used for building up pressure (column 2, line 37).

9. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ulczynski et al. (US Pat No 6,182,904) in view of Gordon et al. (US Pub No 2002/0065479) further in view of Borod et al. (US Pat No 5,335,855) and furthermore in view of Michalchik et al. (US Pat No 4,776,515).

Regarding claim 3, neither Ulczynski or Gordon et al. teach resistivity, however Michalchik discloses a liquid composition having a resistivity of less than 104 ohm.cm (Abstract, lines 7-9). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have motivation to combine the invention of Ulczynski et al. in view of Gordon et al. and the resistivity of Michalchik et al. because a liquid resistivity of greater value can carry a negative charge and even form explosive droplets (column 3, lines 47-48).

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ulczynski et al. (US Pat No 6,182,904) in view of Gordon et al. (US Pub No 2002/0065479) further in view of

Art Unit: 4114

Borod et al. (US Pat No 5,335,855) furthermore in view of Michalchik et al. (US Pat No 4,776,515) and finally in view of Herb et al. (US Pat No 6,179,586).

Regarding claim 4, Gordon et al. discloses the MEMS pump however Herb et al. teaches a diaphragm pump that is electrostatically driven (Abstract, lines 1-2). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have motivation to combine the invention of Ulczynski et al. in view of Gordon et al. further in view of Borod et al. and furthermore in view of Michalchik et al. with the diaphragm pump of Herb et al. as having a reduced pump volume and weight for a given fluid pumping rate due to its compact design (column 1, lines 7-8).

11. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ulczynski et al. (US Pat No 6,182,904) in view of Gordon et al. (US Pub No 2002/0065479) further in view of Borod et al. (US Pat No 5,335,855) and furthermore in view of Lang et al. (US Pat No 6,131,212).

Regarding claim 6, Gordon et al. teaches the MEMS pump however Lang et al. discloses the air stream that serves to draw the liquid composition from the reservoir using a venturi effect (column 2, lines 16-19). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have motivation to combine the invention of Ulczynski et al. in view of Gordon et al. in further view of Borod et al. with the venturi effect of Lang et al. as it increases the turbulent flow of the water (column 2, lines 33-36).

12. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ulczynski et al. (US Pat No 6,182,904) in view of Gordon et al. (US Pub No 2002/0065479) and further in view of Talaski et al. (US Pat No 5,374,169).

With regards to claim 7, neither Ulczynski or Gordon et al. teach a pulse reduction means, however Talaski et al. does disclose said pulse reduction means (Abstract, line 1). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have motivation to combine the invention of Ulczynski et al. in view of Gordon et al. with the pulse reduction means of Talaski et al. as it will reduce audible noise emanating from the pump (Abstract, lines 2-3).

13. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ulczynski et al. (US Pat No 6,182,904) in view of Gordon et al. (US Pub No 2002/0065479) and further in view of Herb et al. (US Pat No 6,179,586).

Regarding claim 8, Gordon et al. teaches said MEMS pump however, Herb et al. discloses a parallel array (column 3, line 52). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have motivation to combine the invention of Ulczynski et al. in view of Gordon et al. with the parallel array of pumps of Herb et al. as it forfeits the need for lateral channels and will increase the pumping rate (column 5, lines 10-12).

In regards to claim 9, Gordon et al. teaches said MEMS pump however, Herb et al. discloses a series array (column 3, line 49-50). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have motivation to combine



Art Unit: 4114

the invention of Ulczynski et al. in view of Gordon et al. with the series array of Herb et al. as it forfeits the need for lateral channels and will increase the pumping rate (column 5, lines 10-12).

14. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ulczynski et al. (US Pat No 6,182,904) in view of Gordon et al. (US Pub No 2002/0065479) further in view of Herb et al. (US Pat No 6,179,586) and furthermore in view of Peters et al. (US Pub No 2001/0014286).

Regarding claim 10, Gordon et al. teaches said MEMS pump while Herb et al. discloses a parallel array of pumps, however Peters et al. teaches non-synchronous pulse frequencies (paragraph 47, lines 9-13). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have motivation to combine the invention of Ulczynski et al. in view of Gordon et al. further in view of Herb et al. with the non-synchronous pulse frequencies of Peters et al. as it will prevent vibration of the actuators and audible noise during operation of the micropump (paragraph 47, lines 11-12).

15. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ulczynski et al. (US Pat No 6,182,904) in view of Gordon et al. (US Pub No 2002/0065479) further in view of Borod et al. (US Pat No 5,335,855) and furthermore in view of Kohlmann et al. (US Pat No 5,333,660).

Regarding claim 11, none of Ulczynski, Gordon or Borod et al. teach a buffer chamber, however Kohlmann et al. does disclose a buffer chamber for receiving the air from the MEMS pump (column 7, line 32). Therefore it would have been obvious to one having ordinary skill in

Art Unit: 4114

the art at the time the invention was made to have motivation to combine the invention of Ulczynski et al. in view of Gordon et al. further in view of Borod et al. with the buffer chamber of Kohlmann et al. as it can greatly reduce maintenance needs (column 2, line 20).

In regards to claim 12, Kohlmann et al. teaches that the buffer chamber has a volume of at least half that of the reservoir containing the liquid composition (Fig. 8, #'s 113 and 114).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have motivation to combine the invention of Ulczynski et al. in view of Gordon et al. further in view of Borod et al. with the buffer chamber of Kohlmann et al. as it can greatly reduce maintenance needs (column 2, line 20).

### ***Conclusion***

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hess et al. (US Pub No 2002/0043568) discloses a dispensing device. Zuckschwerdt et al. (US Pat No 5,816,504) discloses a discharge apparatus for flowable media. Czech et al. (US Pat No 5,285,966) teaches a spraying apparatus. Hisao et al. (US Pat No 3,565,344) teaches an electric sprayer. Raoul et al. (US Pat No 1,584,410) teaches a pocket vaporizer. Cabuz et al. (US Pat No 6,106,245) teaches an electrostatically actuated mesopump. Bachand et al. (US Pat No 5,857,591) teaches a simultaneous pump dispenser.

Art Unit: 4114

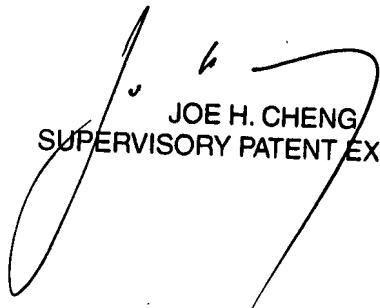
17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven M. Cernoch whose telephone number is (571) 270-3540.

The examiner can normally be reached on M-T, 730-5, F1 -Off, F2 730-5 (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joe Cheng can be reached on (571) 272-4433. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SMC  
10/9/2007

  
JOE H. CHENG  
SUPERVISORY PATENT EXAMINER